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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/865,976

05/25/2001

Zhao Wu

016491-38.00US

6342

20350

7590

11/02/2004

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EXAMINER

SHAH, CHIRAG G

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/865,976	Applicant(s) WU, ZHAO	
	Examiner Chirag G Shah	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 18-28 is/are rejected.
- 7) ☒ Claim(s) 11-17 and 29-35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/25/01</u> . | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1 and 18 rejected under 35 U.S.C. 102(E) as being anticipated by Miyamoto (U.S. Patent No. 5,715,249)

Referring to claims 1 and 18, Miyamoto discloses in figure 3 of an apparatus (ATM cell format converter) and a method for converting a cell format from a first format (ATM cell) to a second format (plurality of data blocks), the cell including a plurality of data byte (data blocks of ATM cells, B2, B3, Bm), the circuitry comprising:

Memory [Conversion Memory 21 of figure 3];

write circuitry [22-24] which is operative to receive a plurality of signals and stores the plurality of data bytes of the cell in the memory in accordance with the first format [as disclosed

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in figure 3 and col. 3, lines 37-58 writing circuitry 22-24 receives IDS, ICP and WCP and stores the ATM cell in the conversion memory 21]; and

read circuitry [25-27] which is operative to receive a second plurality of signals and retrieve associated bytes of the stored plurality of the data bytes of the cell from the memory in accordance with the second format [as disclosed in fig. 3-5 and in col. 4, lines 10-42, the stored ATM cell is read out from the conversion memory 21 to form an ODS, which proves an ATM cell format converted signal. Furthermore, upon receiving a SDH PIS (Payload Indication Signal) and OCP (Output cell pulse), the output data signal is supplied to an external processing circuit and is processed therein into the converted signal]; wherein

the first plurality of signals do not include any of the second plurality of signals [as disclosed in figure 3, first plurality of signals include IDS, ICP and WCS]; and wherein

the second plurality of signals does not include any of the first plurality of signals [as disclosed in figure 3, second plurality of signals include OCP and PIS] as claim.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto in view of Applicant Admitted Prior Art.

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Referring to claims 2 and 19, Miyamoto discloses in figure 3 of the write circuitry and the read circuitry. Miyamoto fails to disclose wherein each of the write circuitry and the read circuitry is a state machine. Applicant Admitted Art discloses in figure 4, 5 and in the specification of page 3, lines 24-29 that the write logic in figure 4 and the read logic in figure 5 requires a large number of transitions in the state machine, thereby resulting in a large number of gates in the swizzle logic. Therefore, it would have been obvious to one of ordinary skills in the art to modify the teachings of Miyamoto to include that the read and write circuitry is a state machine as taught by Applicant Admitted art in order to provide state transition logic for carrying out the cell format conversions.

5. Claims 3-11 and 20-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto in view of Applicant Admitted Art as applied to claims 1, 2, 18 and 19 above, and further in view of Susnow (U.S. Patent No. 6,594,329).

Referring to claims 3 and 20, Miyamoto in view of Applicant Admitted Art discloses of asymmetry of cell format converters, thus the swizzle logic carrying out the format conversion requires a large number of transitions in the state machine. Miyamoto fails to disclose wherein the state machines of the write circuitry and the read circuitry provide identical state transitions. Susnow discloses in figure 4 and respective portions of the specification of utilizing a gray counter for enabling the current value of the Write Pointer to be synchronized into the Receiver Clock Domain and determining the current state of memory fullness of the Memory Element unit 310. Susnow discloses in figure 4 and in column 7, lines 33-66 that the Read Pointer Generation unit 360 is essentially a replication of the Write Pointer Generation unit 330 which operates in the receiver clock domain rather than the link clock domain, thus, establishing that write and

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read state machines provide identical state transitions. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Miyamoto in view of Applicant Admitted Art to include the feature of read and write state machines providing replicate transitions in order to ensure that data is read from the buffer in the same order that it was written to the buffer.

Referring to claims 4 and 21, Miyamoto in view of Applicant Admitted Art disclose of read and write state machines. Miyamoto in view of Applicant Admitted Art fails to disclose wherein the states of each of the write and the read state machines are Gray encoded. Susnow discloses in figure 4 and in column 6, lines 52 to column 7, lines 4 of utilizing a gray counter for enabling the current value of the Write Pointer to be synchronized into the Receiver Clock Domain and determining the current state of memory fullness of the Memory Element unit 310. Susnow further discloses in column 7, lines 33 to column 8, lines 13, the two sets of read and write pointers may be implemented as Gray counters, allowing the output control unit 350 to accurately track fullness of the Memory Element unit 310. The implementation of Gray code counters may prohibit incorrect transition from happening, at worst, the synchronized value may be off by 1-bit which implies that Memory Element unit 310 is empty for one additional cycle. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Miyamoto in view of Applicant Admitted Art to include the feature of read and write state machines being gray encoded in order to prohibit incorrect transition from happening, ensuring accurate tracking fullness of the buffer.

Referring to claims 5 and 22, Applicant Admitted Art discloses in the specification and in figure 4 of a dual port RAM or Register file which is 32 bits wherein each successive n bytes of

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the cell is stored in a different address location of the memory wherein  $n$  is an integer varying between 1 and 32 as claim.

Referring to claims 6 and 23, Applicant Admitted Art discloses in the specification in figure 5 wherein  $n$  is 4 since write state machine receives four logic signals of the incoming cell as claim.

Referring to claims 7 and 24, Applicant Admitted Art discloses in figure 4 wherein the write state machine is further operative to receive logic signals defining lengths of prepend (WPRELEN), postpend (WPOSTLEN) and HEC (WHECLEN) fields of the first format of the cell as claim.

Referring to claims 8 and 25, Applicant Admitted Art discloses in figure 4 wherein the read state machine is further operative to receive logic signals defining lengths of prepend (RPRELEN), postpend (RPOSTLEN) and HEC (RHECLEN) fields of the second format of the cell as claim.

Referring to claims 9 and 26, Applicant Admitted Art discloses in figure 4 and on page 3, lines 1-11 of the specification wherein the lengths of prepend (Wprelen-2bits), postpend (Wpostlen-2 bits) and HEC fields (Wheclen-1 bit) of the first format (incoming cell format) of the cell define the sequence of state transitions of the write state machine as claim.

Referring to claims 10, 11, 27 and 28, Applicant Admitted Art discloses in figure 4 and on page 3, lines 1-11 of the specification wherein the lengths of prepend (Rprelen-2bits), postpend (Rpostlen-2bits) and HEC (Rheclen-1bit) fields of the second format (outgoing ATM cell) of the cell define the sequence of state transitions of the read state machine, since the

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lengths of the fields in the first and the second format are the same, the write and read states would transition through the same sequence of states as claim.

***Allowable Subject Matter***

6. Claims 12-17 and 29-35 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

(703)305-3988, (for formal communications intended for entry)

**Or:**

(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:00 to 4:30.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs  
October 27, 2004

  
Ajit Patel  
Primary Examiner